HIGH DESERT POWER PROJECT
(97-AFC-1)

ISSUE IDENTIFICATION REPORT

CALIFORNIA ENERGY COMMISSION

Energy Facilities Siting and Environmental Protection Division

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ISSUE IDENTIFICATION REPORT

PURPOSE OF THIS REPORT

This report has been prepared by the California Energy Commission staff to inform the Committee and all interested parties of the major issues that have been identified as a result of our initial site visit, discussions with other agencies and interested participants during the data adequacy phase, and our review of the High Desert Power Project (HDPP) Application for Certification (AFC) (97-AFC-1). The report contains a project description, a summary of potential major issues, a summary of policy issues and a discussion of the project schedule.

PROJECT DESCRIPTION

The HDPP will be located on a 25 acre site in a portion of Section 24, Township 6 North, Range 5 West, (San Bernardino Base and Meridian) on the site of the Southern California International Airport (SCIA), formerly George Air Force Base, located within the northwest corner of the city of Victorville. See Project Summary Figure 1 for the location of the project site and related facilities.

The applicant has identified three alternative natural gas-fired design configurations for the HDPP: a simple cycle combustion turbine design consisting of five combustion turbines with a combined rating of 832 megawatts (MW), a combined cycle design consisting of three combustion turbines and three steam turbines with a combined rating of 720 MW, and a combined cycle design consisting of two combustion turbines and two steam turbines with a combined rating of 678 MW. Natural gas is burned in the combustion turbine generators, which converts the thermal energy into the mechanical energy required to drive the compressor and electric generator.

Turbine performance is enhanced with an inlet air evaporative cooler. Nitrogen oxide (NOx) emissions from the combustion process will be reduced to 9 parts per million by utilizing dry low NOx combustion technology. Other major components of the simple cycle combustion turbine configuration include water treatment equipment, air compressor, inlet air evaporative coolers, turbine and generator set, exhaust stacks, continuous emission monitors, control room and administrative building, and step-up transformers.

In addition to the major components described above for the simple cycle configuration, the combined cycle configurations will incorporate heat recovery steam generators, steam turbines, cooling towers, Selective Catalytic Reduction (SCR) and aqueous ammonia storage and handling equipment. The SCR and ammonia are used to reduce NOx emissions. The SCR and dry low-NOx combustion technology will reduce NOx emissions from the combined cycle configurations to 4 parts per million or less. The heat recovery steam generators are used to recover waste heat from the combustion turbine exhaust to produce steam. This steam is then expanded in the

steam turbines to produce electricity. Three heat recovery steam generator and steam turbine trains will be used for the 720 MW combined cycle configuration, and two heat recovery steam generator and steam turbine trains will be used for the 678 MW combined cycle configuration.

A new 7.2 mile 230 kilovolt (kV) overhead electric transmission line will be built to interconnect the project to the Southern California Edison Company's electrical transmission system at the Victor Substation. A new electric 230-kV switch yard will be constructed on the eastern end of the project site. A 2.75 mile natural gas pipeline will be constructed by Southwest Gas Company to provide fuel for the project and will enter at the southeast corner of the site. Potable water will be provided by the Victor Valley Water District and will enter at the southeast corner of the site. Cooling water for either of the combined cycle configurations will be provided from one of two alternative sources: imported water from the State Water Project which is not a firm water supply, and as a backup, ground water from existing or future wells to be drilled in the area. The project will not discharge wastewater. Instead the wastewater will be treated by a crystallization process in which distilled water will be used and precipitated solids will be disposed of in a landfill. The engineering and environmental details of the proposed project are contained in the AFC.

The applicant proposes to start construction in 1999 on the 200-300 million dollar project. Project construction will take about 18 months and will employ 370 construction workers during the peak construction period. The project will employ 27 full time employees during operation.

MAJOR ISSUES

This portion of the report contains a discussion of the major issues staff has identified to date. The Committee should be aware that the list may not include all the significant issues that could arise during the case, as discovery is not yet complete and other parties have not yet had an opportunity to identify their concerns. Staff's identification of major issues was based on its estimate of whether any of the following circumstances will occur:

- significant impacts may result from the project which may be difficult to mitigate;
- the project as proposed may not comply with applicable laws, ordinances regulations or standards (LORS);
- conflicts arise between the parties about the appropriate findings or conditions of certification for the Energy Commission decision.

The following table identifies the subject areas staff evaluated and their conclusions at this time. Even though an area is identified as having no "major" issues, it does not mean that "no" issue will arise related to the subject area. For example, disagreements regarding the appropriate conditions of certification my arise between

staff and applicant which will require discussion at workshops or even subsequent hearings. However, staff does not believe such issue will have an impact on the case schedule or that resolution will be difficult.

Major Issue	Subject Area	Major Issue	Subject Area
Yes	Air Quality	No	Noise
No	Alternatives	No	Paleontological Resources
No	Biological Resources	No	Public Health
No	Cultural Resources	No	Socioeconomics
No	Efficiency and Reliability	No	Soils
No	Electromagnetic Fields & Health Effects	No	Traffic and Transportation
No	Facility Design	No	Transmission Line Safety & Nuisance
No	Geology	**Yes**	Transmission System Engineering
No	Hazardous Materials	**Yes**	Visual Resources
No	Industrial Safety and Fire Protection	No	Waste
Yes	Land Use	**Yes**	Water Resources
No	Need Conformance		

The following discussion summarizes each major issue, identifies the parties needed to resolve the issue, and recommends a process for achieving resolution. Staff plans to use this issue identification report to focus its own analysis.

AIR QUALITY

The three critical air quality issues that may affect the timing and possible outcome of the licensing process include (1) the determination of what constitutes Best Available Control Technology (BACT) for the project; (2) the provision of offsets consistent with Commission licensing requirements; and (3) evaluation of the project's likelihood of compliance with federal Prevention of Significant Deterioration (PSD) requirements. Given the large size of the proposed facility, California Air Resources Board (ARB) and U.S. Environmental Protection Agency (EPA) staff have expressed an interest in some or all of these issues. Therefore, staff's primary strategy to assure resolution of these issues will be to facilitate the timely and coordinated participation of the Mojave

Desert Air Quality Management District (District), the ARB and EPA within the Commission's 12 month licensing process.

Best Available Control Technology (BACT)

The applicant has proposed a dry low-NOx combustor for the turbine in the simple cycle mode, and a combination of dry low-NOx combustor/selective catalytic reduction (SCR) system for the combined cycle mode to control nitrogen oxides (NOx) emissions. To control particulate matter less than 10 microns (PM10), sulfur oxides (SOx), carbon monoxide (CO) and hydrocarbon emissions, the applicant has proposed "good-combustion" practices and natural gas fuel as BACT, which is required for this project. The District, in its Determination of Compliance (DOC) review will decide whether the proposed control technologies for the various pollutants constitute BACT, and EPA and ARB have the option of commenting on the District's BACT determination.

EPA has recently endorsed a new technology, the Sunlaw Carbon Monoxide and Nitrogen Oxide (SCONOx^{TM}) process, as technically feasible and practical for the control of NOx and CO emissions from gas turbines. The District staff has also indicated that they will require the applicant to evaluate the feasibility of using the SCONOx^{TM} technology to control NOx and CO emissions from the proposed project. Therefore, EPA and ARB's timely review of the applicant's BACT evaluation, along with the District, will be needed to facilitate the licensing process. We expect that these agencies will express any concerns they have about the District's BACT determination within the 30 day review and comment period that follows the issuance of the Preliminary DOC. If ARB or EPA choose not to comment until the District has issued its Preliminary DOC, a resolution of issues raised at that time could delay the issuance of the final DOC. Although this would not likely delay the completion of the staff's FSA, it could delay the hearing process and thus the final decision.

Offsets

Consistent with the District's New Source Review (NSR) requirements to provide offsets for the project for NOx, VOC and PM10, the AFC identifies, in concept, the use NOx and/or VOC emission reduction credits (ERCs) from three cement plants, from the South Coast air basin, and from the now-closed George Air Force Base; and PM10 ERCs from road paving. Neither the specific offset proposals nor the details of how they will achieve such reductions are included in the AFC, but will need to be provided by the applicant by 3/19/98. The applicant has, however, in a letter to the ARB, dated 12/12/97, more specifically described some of the choices that they have made regarding offset sources and the strategies that they are pursuing to obtain them. Both ARB and EPA have expressed interest in reviewing the applicant's offset proposals. As with the BACT issue, if ARB or EPA delay commenting on the offset proposals until the end of the PDOC review period, it could delay issuance of the final DOC. This would not delay the staff's FSA but could delay the hearing process.

Although the District, in its DOC may review and approve the applicant's offset proposals, they may not require that offsets be provided until "prior to construction". However, the Energy Commission cannot approve the application until the District certifies that the complete emissions offsets for the proposed facility have been identified and will be obtained by the applicant prior to the Energy Commission's licensing of the project. [PRC section 25523]

The current status of the applicant's offset proposals are as follows:

1. Emission Reduction Credits from the three cement plants:

   In its recent letter to ARB, the applicant indicated that they expect to obtain all required NOx ERCs from within the District. District staff has indicated that the NOx ERCs will be obtained from existing cement plants within the District. The cement plant NOx ERCs will be processed under the District's recently adopted banking rule. The applicant stated at the December 30, 1997 workshop that some of the sources with whom they are negotiating for NOx ERCs have already submitted banking applications to the District.

2. Emission Reduction Credits from the South Coast air basin:

   The applicant has also indicated in its letter to ARB that they are pursuing the direct inter-basin credit trading of VOC ERCs from the SCAQMD for some of the project's VOC emissions. They have proposed an inter-basin trading ratio of 1.5 to 1, which they claim exceeds Clean Act requirements. However, the appropriate ratio for such a trade, which should be described by the District in the DOC, has not yet been agreed to by the District, ARB and EPA. Staff will be meeting with the District, ARB and EPA on January 21, 1998 to discuss this issue and identify a strategy for providing timely guidance to the applicant. If agreement about the appropriate ratios is not reached prior to the issuance of the Preliminary DOC, the Final DOC could be delayed.

3. Emission Reduction Credits from the closed George Air Force Base:

   According to the District staff, the applicant is also pursuing the use of VOC ERCs from the shut down of emissions sources at the former George Air Force Base. Those ERCs will be processed under the District's banking rule, and may be subject to Reasonably Available Control Technology (RACT) adjustments (reductions), which will be established by the District, ARB and EPA.

Compliance with the Federal PSD

EPA's Prevention of Significant Deterioration (PSD) program is designed to prevent significant deterioration of ambient air quality (for attainment pollutants) due to the siting of new or modified existing stationary sources in attainment areas. Since the District is designated attainment for NO2, SO2 and CO, the applicant needs to obtain

a PSD permit for the project from EPA before it can begin construction. As part of staff's analysis, we are required to advise the Committee about the likelihood that the project, as proposed, will obtain a PSD permit.

In the staff data request workshop held on Tuesday, 12/30/97, the applicant indicated that it plans to file a PSD application with EPA by the end of January, 1998. It also agreed to provide staff with a copy of the PSD application at that time, which should satisfy staff's PSD-related data requests.

To obtain a PSD permit, the applicant will need to (1) perform a visibility impact analysis; (2) gather one year of ambient air quality monitoring data from the affected area, or gain EPA's approval of existing data; and (3) determine the air quality increment (an impact) that the project will be allowed to consume above the existing ambient air pollutant concentrations.

If EPA determines that the existing ambient air quality data are not acceptable to use for the PSD analysis, the applicant will have to develop an acceptable protocol, which it must then use as the basis for collecting air quality data from the affected area. In this circumstance, the applicant may face a significant delay in securing their PSD permit. Even if EPA finds the existing meteorological data adequate, the PSD process will still very likely extend beyond the Energy Commission's 12 month licensing schedule for the project. The staff will be discussing this issue with EPA at its January 21, 1998, meeting to identify what portions of the PSD process can be completed within the Energy Commission's licensing process.

LAND USE

The AFC indicates the applicant's willingness to comply with all LORS. However, due to the close proximity of the proposed site to the active runways at the Southern California International Airport (SCIA), staff is concerned whether the project can comply with all applicable regulations. The Comprehensive Airport Land Use Plan (CALUP) and Federal Aviation Administration (FAA) Title 14 CFR, Part 77, restricts the location of some structures near airport runways and the AFC does not clearly indicate whether the project site is located in a restricted area. Staff requested more detailed information from the applicant in its December 17, 1997 data requests. Responses are due January 16, 1998. Staff will coordinate its evaluation of the project with local governmental officials from the SCIA, the Victor Valley Economic Development Agency, and the City of Victorville, as well as the California Department of Transportation-Division of Aeronautics, and FAA. Based on this review, staff will be able to determine whether the project or any portion of the project needs to be relocated, or whether additional mitigation measures will be required and present its findings in the PSA.

TRANSMISSION SYSTEM ENGINEERING

Background

During heavy summer conditions (e.g., high local and import loads), the Southern California Edison (SCE) system has a load of approximately 19,000 megawatts (MW) with local "basin" generation of 12,000 MW and the remainder of the load and losses provided by power imports. The project site and the Victor Substation (near the Lugo Substation) where power from the project will enter the transmission system, are located in an area where 3,900 MW of power bound for the Los Angeles load is located. As is characteristic of other systems, a balance between the amount of imports and the amount of local basin generation must be maintained during all operating conditions to conform with reliability and operating criteria.

Previous studies by SCE (November, 1996) have shown that currently, under stressed conditions, either transmission facility expansion is needed or generation patterns have to be coordinated to maintain local area and Western Systems Coordinating Council (WSCC) reliability criteria. Previous plans to expand transmission facilities are on hold, and the Independent System Operator (ISO) recently made a decision regarding the amount of "must run" generation for the SCE system. Must run generation is composed of the Los Angeles basin gas fired units required for system reliability and include Mandalay, El Segundo, Redondo, Alamitos, Huntington Beach, and Etiwanda (some 6,576 MW of power).

Discussion

Because of the way the area transmission system developed, there are many stakeholders who are potentially affected by insertion of the applicant's 678-832 MW unit into the system. Major lines in the area include those owned by the Los Angeles Department of Water and Power (LADWP) and SCE. The cities of Vernon, Pasadena, Burbank, Glendale, Riverside and Anaheim depend on power imports through the area and have contractual rights to transmission capacity.

Preliminary system interconnection studies (AFC, Appendix BB), which are designed to predict conditions during the 1998-2001 time frame identify both major transformer and transmission line loadings that would be in excess of ratings, absent mitigation measures. Since transmission lines and transformers are not operated above their reliable ratings, steps to reduce overloads suggested by the applicant include reducing imports on two paths through the area and/or reducing the output of the applicant's unit. Reducing the scheduled import of power through the area would impact stakeholders and could only be done by consensus or under the authority of the ISO. Given that the ISO is not fully operational, there is concern that the decision on the acceptability of such mitigation measures could be provided in a timely manner. The acceptability of reducing the applicant's power output also has potential system reliability implications since system dispatchers would be relying on it if the project is built. To identify all the stakeholders and their concerns, the staff will hold workshops,

and prepare discussion topics for such workshops, to engage parties in resolution of system reliability concerns. It is anticipated that at minimum, the applicant, SCE, LADWP, Commission staff, the ISO, the ISO Trust, and other interested parties would participate. The first of these workshops is scheduled for January 8, 1998, in Sacramento.

Related concerns arise from the system interconnection studies which predict system performance and conformance with reliability criteria. The assumptions utilized in the interconnection studies are critical to accurately identifying potential reliability concerns and identifying impacts to stakeholders. The California Unions for Reliable Energy (CURE) has expressed serious concerns about those units classified as must run, operation of the Cool Water generating unit, and the study's assumption that major transformers not presently planned will exist in 1998. Current information from the applicant and SCE indicates that the applicant has not authorized SCE to initiate the interconnection study. SCE has informed staff that it will require 10 weeks for SCE to complete the interconnect study. On December 17, 1997, staff requested the applicant provide power flow files and a stability analysis by January 16, 1998. Staff anticipates it may have additional data requests because of the complexity of the regional transmission system and number of stakeholders. Staff is concerned that the delay in obtaining the interconnection study from SCE will have serious implications on staff's ability to provide a timely and complete analysis.

VISUAL RESOURCES

Both the proposed electric transmission line and the power plant may cause significant visual impacts to people using the golf course on the Southern California International Airport property, to travelers on El Evado Road, and on Oro Grande residents. These impacts may be difficult to mitigate to a less than significant level.

The AFC (page 5.9.23) states that "depending on the exact size and location of the proposed transmission lines, views from the golf course, proposed El Evado Road expansion, and other P/OS [public open space] areas in Unit 4 could range from visually subordinate to highly evident or dominant, and thus are potentially inconsistent with a Class II area. This is a potentially significant impact. ... However, with mitigation as recommended below, including careful siting of poles to place them out of the most important view corridors from the golf course to the valley and mountain, and siting of the line on the uphill (western) side of El Evado Road, these effects could be kept to a subordinate level and thus be less than significant."

For the proposed mitigation to be effective, enough room must be maintained between the golf course and the location of the El Evado Road expansion. Furthermore, the two mitigation measures may conflict, as the AFC notes (pp.5.9.26 to 5.9.27): "If feasible, the transmission line should be sited upslope (west) of proposed El Evado Road in order to minimize obstruction of scenic views from the roadway, unless doing so would increase impacts to the golf course." [emphasis added]

Potentially significant visual impacts to residents of the Oro Grande area created by the proposed electric transmission line and the power plant, especially those along the Mojave River, may be difficult to mitigate to less than significant levels. The conductors, portions of the transmission towers, and the power plant's vertical elements will be skylined in a view that currently shows no development. Also, the power plant may create reflective glare.

Staff and the applicant should attempt to resolve these issues through discovery, workshops, and conditions of certification. Staff has prepared data requests, with responses due on January 16, 1998, to obtain from the applicant information necessary to determine the potential for significant visual impacts and effectiveness of the mitigation measures proposed. If the impacts cannot be reduced to less than significant levels, a finding of overriding consideration by the Commission may be required for the project to proceed.

WATER RESOURCES

Water Supply

The two combined cycle configurations for the High Desert Power Project will require from 4,000 to 6,000 acre feet of water per year, while the simple cycle configuration will only require 57 acre feet of water per year. The applicant proposes to use water from the State Water Project (SWP) as the project's primary water supply. This water can be provided to the project through a pipeline that is currently being constructed a short distance from the power plant site. The Mojave Groundwater Basin, in which the project is located, is an adjudicated basin, which means that a court has appointed the Mojave Water Agency as Watermaster to oversee groundwater use. The Mojave Water Agency has developed a Regional Water Management Plan in order to manage both local and imported water supplies to eliminate overdraft within the basin. The use of SWP water by the proposed project may adversely affect the Mojave Water Agency's efforts to use imported water for groundwater recharge to reduce groundwater overdraft within the basin.

The State has also adopted water use policies which may affect this project. State Water Resources Control Board Policy 75-58, the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling, requires the evaluation of alternatives to the use of "fresh inland waters," specifically those using water from Central Valley streams, which includes State Water Project water. This policy states that "[a]n analysis of the cost and water use associated with the use of alternative cooling facilities employing dry, or wet/dry modes of operation" needs to be conducted. Staff has submitted to the project proponent a data request asking for information on cost and water consumption of alternative cooling technologies and will evaluate the availability of alternative water supplies for the project.

As a result of Staff's analysis of project compatibility with regional and state water policy, staff may recommend mitigation measures, or recommend that the Commission

find that the project's water use constitutes a significant adverse impact. Staff expects to present its preliminary conclusions in its PSA.

Groundwater

The project will need to utilize alternative sources of water during the two-to-four weeks each year that the SWP aqueduct is typically closed. In addition, SWP deliveries are not certain, being contingent on rainfall and other factors. Thus, even if the Mojave Water Agency decides to grant the Applicant's request to use SWP water for the project, back-up sources of water will be required.

The AFC water section provides a brief discussion of potential impacts if SWP delivery is interrupted for three years. Groundwater usage during this period for the combined cycle alternative would reduce groundwater levels in the subarea by about 100 feet. Staff believes that this level of reduction may constitute a significant impact and is therefore analyzing whether a three-year interruption is likely. Staff has also submitted a data request to the project proponent requesting confirmation of the project well locations. Staff believes that once the likely groundwater use is determined, the applicant will need to provide more sophisticated groundwater modeling to determine the project's likely groundwater impacts.

POLICY ISSUES

Staff has identified two policy issues that the Committee should consider during the review of this project. They are: 1) determination of appropriate decommissioning requirements of a merchant facility, and 2) determination of appropriate permit conditions for operation of a proposal with multiple project configurations. These policy issues will be discussed further in the Preliminary Staff Assessment for consideration, if appropriate, by the Committee and the parties during subsequent hearings.

Decommissioning was raised as an issue in both the 1994 and 1996 ***Electricity Reports*** proceedings because of the potential for project failure of merchant facilities. The Energy Commission's Energy Facility Siting Committee may address this issue in a separate proceeding during the next six months. However, this issue may also need to be addressed separately in this case.

The applicant is currently proposing three development scenarios for its project to be able to respond to the needs of the emerging competitive market. Previously, the Energy Commission has permitted a specific project at a specific site. While the applicant and staff have discussed an "envelope" concept for both analyzing the project and developing permit conditions, these concepts need to be explored by the Committee and other parties during the course of the proceeding.

SUMMARY OF SCHEDULING ISSUES

Staff has begun its analyses of the major issues identified above, as well as its assessment of other environmental and engineering aspects of the applicant's proposal. As noted above, the first step in that assessment was the issuing of data requests to the applicant on December 17, 1997. Over the next few months staff may issue additional data requests and conduct public data request, data response, and issue resolution workshops to address concerns regarding the applicant's proposal. Below is staff's proposed schedule for key events for the project.

DATE	DAYS	EVENT
19-Nov-97	-14	Mojave Desert Air District deems ATC application complete
03-Dec-97	0	Energy Commission deems AFC complete
15-Jan-98	43	**Information Hearing, Issue Identification & Site Visit**
16-Jan-98	44	Data Request Responses due from Applicant
20-Jan-98	48	Applicant submits BACT, visibility analysis and health risk assessment to Mojave Desert Air District
20-Mar-98	107	Applicant submits Offset Proposal to Mojave Desert Air District
20-Apr-98	138	Mojave Desert Air District files Preliminary Determination of Compliance
15-May-98	163	Staff Files Preliminary Staff Assessment
19-Jun-98	198	Mojave Desert Air District files Final Determination of Compliance
30-Jun-98	209	**Prehearing Conference**
15-Jul-98	224	Staff Files Final Staff Assessment
04-Aug-98 - 14-Aug-98	244 254	**Hearings**
02-Dec-98	364	Adopt Decision

Staff's initial findings regarding the major issues discussed above, as well as other environmental and engineering findings regarding the project, will be presented in the Preliminary Staff Assessment (PSA) in the middle of May 1998. Key events which will dictate whether staff will be able to meet this date are the applicant's timely response to staff's data requests,[1] the applicant's submittal of information required by the

1. On December 31, 1997, staff expects the applicant to submit a discussion of whether and when it can respond to staff's data requests. Based on this submittal, staff will advise the Committee, at the January 15, 1998 Informational Hearing, of whether the applicant's proposed schedule to respond to staff's data requests will impact staff's proposed schedule.

Mojave Desert Air Quality Management District (District), and the District's filing of its Preliminary Determination of Compliance (PDOC). In addition, in order to have a comprehensive transmission system engineering analysis in the PSA, the applicant must submit the transmission interconnection study as soon as practicable. If the transmission interconnection study is delayed, staff's first opportunity to disclose its findings on transmission system engineering issues may be in the Final Staff Assessment (FSA).

After publishing the PSA staff will conduct public workshops to discuss its findings, recommendations and proposed conditions of certification. Based on these workshop discussions and other information that may be provided to staff, staff will present its conclusions and recommendations in the FSA which will filed in the middle of July 1998. Critical events that will dictate whether staff can meet this schedule will be the timing and extent of ARB's and EPA's comments on the District's PDOC, and the submittal and review of the PSD permit application. Bi-monthly during the case, staff intends to submit to the Committee, applicant and other parties a status report on the progress staff is making in meeting the schedule outlined above.